

Appl.No. 10/710,716

Amdt. Dated April 18, 2006

Reply to Office action of January 18, 2006

**Amendments to the Specification:**

Please replace paragraph [0016] with the following amended paragraph:

[0016] Figure 7 is a an illustration of an outline of a blank to be obtained from the coil of metal material of Figure 6 at a first station for use in the manufacture of a diaphragm backing plate according to the present invention; [[and]]

Please replace paragraph [0018] with the following amended paragraph:

[0018] Figure 9 is a schematic illustration of the blank disc of Figure 8 wherein a lip is rolled on a peripheral surface to define a desired diameter for a diaphragm backing plate~~[[.]]~~ ; and

Please replace paragraph [0020] with the following amended paragraph:

[0020] A backing plate 10, of a type illustrated in Figures 4 and 5, provides strength through which a force created by a pressure differential on opposite sides of a diaphragm in the brake booster may be transmitted into a hub for moving an output member to effect a brake application. The backing plate 10 has an inner diameter 12 that is common for various size brake booster, however, an outer diameter 14 may ~~[[varies]]~~ vary to achieve different levels of output force needed to effecting brake applications for vehicles.

Please replace paragraph [0021] with the following amended paragraph:

[0021] The backing plate 10 as illustrated in Figures 4 and 5 is manufactured from a coil of metal material 16 illustrated in Figure 1. The coil of metal material 16 is obtained from a supplier and has a defined width "W" from which a length "L" is cut for a blank ~~[[fore]]~~ for each backing plate 10. The length L plus a length "X" is such that a certain number of backing plates may be obtained from a coil of material 16 that is un-rolled and fed into a stamping press at a first station as illustrated in Figure 2. A force is applied to a rough die and a blank 18 is produced through a rough blanking step from the coil of metal material 16, the blank 18 has a substantially rough diameter equal to D-1. The blank 18 is transported to a stamping press at a second station and a second force is applied to trim the blank 18 and create a blank 20 that has a diameter equal to D-2, as illustrated in Figure 3. The amount of material trimmed from blank 18 to produce blank 20 is uniform and is represented by a ring 22. The amount of material in ring 22 is waste and occurs in the manufacture of each backing plate 10. The blank 20 is transmitted to a third station and a lip 24 is rolled on the peripheral to produce a blank 26 having a diameter equal to D-3 on its outer surface 14, as illustrated in Figures 4 and 5. The blank 26 is next transported to a fourth station where the surface between the inner 12 and outer surfaces are stamped therein to produce various ridges ~~[[and]]~~ to complete the manufacture of the backing plate 10. This process while satisfactory does result in a waste of metal material since a scrap ring 22 is produced with the manufacture of each backing plate 10.

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Please replace paragraph [0022] with the following amended paragraph:  
[0022] According to the present invention it has been determined that a diaphragm backing plate 40, as illustrated in Figures 9 and 10, may be manufactured from a coil of metal 42 having a width is equal to diameter D-2, as shown in Figures 6 and 7. In this method, the coil of metal material 42 is fed into a stamping press at first station however the length that is fed into the stamping press at a first station is now Lx as the overall dimension needed to manufacture the diaphragm backing plate 40 is reduced by an amount equal to  $Rx - 1/2 D-2$ . A force is applied at this station to produce a plate or blank 44, see Figure 8. Blank 44 is characterized by a plate having a peripheral surface 46 with equal and parallel sides 48 that are connected to each other by an arcuate segment 50. Each arcuate segment has a radius Rx that is approximately equal to one-half of the diameter D-2 plus a minimum width "m" of a desired lip for a diaphragm backing plate 40 while the parallel sides are located at an equal distance from a y coordinate of the center of the coil of metal material 42 and defined by a length along an x coordinate at a point where the radius Rx intersects the y-coordinate on either side of an axial center defined by a pilot hole 54 by the removal of a segment 56 of material from the coil of metal material 42. When the segment 56 of metal material is removed from the coil of material 42, a pilot hole 54 may be punched in each blank 44 such that [[the]] parallel side 48' on the next blank 44' is complimentary to parallel side 48. After a blank 44 is stamped it is transferred to a second station and the parallel sides 48 engage a die and along with the pilot hole 54 align the blank 44 such that a lip 60 having a minimum width m is rolled on the outer or peripheral surface to produce a blank 62 having a diameter D-3, as illustrated in Figures 9 and 10 wherein the lip has a scalloped surface. Thereafter, the blank 62 is transferred to a fourth station and the surface between the inner surface 12 and outer surface 14 stamped to produce various ridges therein to complete the manufacture of the diaphragm backing plate 40.